STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0127558
Owner:	William R. Fuller
Address:	Highway EE North, Cameron, MO 64429
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Cedar Ridge Estates
Address:	Route 1, Winston, MO 64689
Legal Description:	SW ¼, Sec. 22, T59N, R29W, Daviess County
Receiving Stream:	Unnamed Tributary to Lazy Creek (U)
First Classified Stream and ID:	Grindstone Creek (P)(00493)
USGS Basin & Sub-watershed No.:	(10280101-110008)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – Domestic Wastewater - SIC #4952
No-discharge System
Single cell storage lagoon/wastewater irrigation/sludge is retained in lagoon.
Design population equivalent is 77.
Design flow is 3,100 gallons per day (1-in-10 year design including net rainfall minus evaporation).
Average design flow is 400 gallons per day (dry weather flows).
Actual flow is 2,700 gallons per day.
Design sludge production is 1.2 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

February 21, 2003
Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

February 20, 2008
Expiration Date

Jim Hull, Director of Staff, Clean Water Commission

MO 780-0041 (10-93)

FACILITY DESCRIPTION (continued)

Receiving Stream Watershed: a gaining stream setting that flows into an unnamed tributary to Lazy Creek.

Facility Type: No-discharge Storage and Irrigation System for seasonal flows into a gaining stream.

Land Application:
Irrigation Volume /year: 1,162,500 gallons (including 1-in-10 year flows)
Irrigation areas: 7 acres at design loading (7 acres total available)
Application rates/acre: 0.2 inch/hour; 1.0 inch/day; 3.0 inches/week; 24 inches/year
Field slopes: less than 12 percent
Equipment type: sprinklers
Vegetation: grass land
Application rate is based on: hydraulic loading rate

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #001 & #002 – Emergency discharge from lagoon or irrigation sites (Note 1)						
Flow	MGD	*		*	once/day**	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		65	45	once/week**	grab
Total Suspended Solids	mg/L		110	70	once/week**	grab
Ammonia Nitrogen as N	mg/L	*		*	once/week**	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2003.						
Outfall #001 – Land Application Operational Monitoring (Notes 2 & 3)						
Lagoon Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches/ acre	*			daily	total
Rainfall	inches	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE January 28, 2004. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** Monitor only when discharge occurs. Report as no-discharge when a discharge does not occur during the report period. This facility is required to meet a removal efficiency of 65% or more.

Note 1 - **No-discharge facility requirements**. Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year 365 day rainfall or the 25-year 24-hour storm event.

C. SPECIAL CONDITIONS (continued)

Note 2 - Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

a. Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Report as no-discharge when a discharge does not occur during the report period.

4. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained. If operating records indicate, excessive percolation, the department may require corrective action as necessary to eliminate excess leakage.

5. Annual Report

   An annual report is required in addition to the quarterly reporting under Section A of this permit. The annual report shall be submitted by January 28 of each year for the previous growing season from October 1 through September 30 or an alternate 12 month period approved by the Department and listed in the Operation and Maintenance Manual. This report shall be submitted using report forms approved by the Department and shall include a summary of the monitoring and record keeping required by the Special Conditions and Standard Conditions of this permit.

C. SPECIAL CONDITIONS (continued)

6. Water Quality Standards
   a. Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   b. General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
   (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
   (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

8. Wastewater Irrigation System.

   a. Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.

   b. Irrigation Design. Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:

      (1) No-Discharge System. When the Facility Description is “No-Discharge”, wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.

   c. Saturated/Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions.

C. SPECIAL CONDITIONS (continued)

8. Wastewater Irrigation System (continued)

d. Lagoon Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year-24 hour storm events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30.

e. Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.

f. General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.

g. Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwelling; or 50 feet of the property line.

h. Public Access Restrictions. Public access shall not be allowed to the irrigation site(s).

i. Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least once/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.

j. Operation and Maintenance Manual.
The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to the departments' Water Pollution Control Program and Regional Office for review and approval. The O&M Manual shall be reviewed and updated at least every five years.

k. Nitrogen Loading Rates. Wastewater irrigation rates shall not exceed a nitrogen application rate of 150 pounds total nitrogen per acre per year. Hydraulic application rates exceeding 60 inches per acre per year shall calculate nitrogen loading rates and include results in the annual report. The calculation procedures are as follows: (Total N) x (0.226) x (inches per acre irrigated) = pounds total N per acre. Where Total N = [Total Kjeldahl Nitrogen (TKN) as N] + [Nitrate Nitrogen as N]. If the applied wastewater exceeds, 150 pounds total nitrogen per acre/year, the permittee must reduce the application rates or submit a revised permit application to request use of the Plant Available Nitrogen (PAN) method based on crop nitrogen requirements for harvested crops. PAN availability factors for surface application are: [Ammonia N x 0.6] + [Nitrate N x 0.9] + [Organic N x 0.6] = PAN. The annual report shall include testing results for wastewater, soils and crop yields and calculations for nitrogen applied and crop removal of nitrogen.